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Guidelines for accommodating social and environmental considerations in the United Nations Framework Classification for Resources

Accommodating Social and Environmental Considerations in the United Nations Framework Classification for Resources: Concepts and Terminology

Prepared by the Social and Environmental Considerations Task Force of the Expert Group on Resource Classification

Summary

This report of the Social and Environmental Considerations Task Force is a supplement to the document "Draft Guidance on accommodating environmental and social considerations in the United Nations Framework Classification for Resources (UNFC)" (ECE/ENERGY/GE.3/2018/3) that will be presented at the ninth session of the Expert Group on Resource Classification. It covers two main topics:

- Clarification of some terms relevant to social and environmental considerations.
- Discussion of topics that arose during, but outside, the immediate scope of the work of the Social and Environmental Considerations Task Force.

It is presented for consideration by the Expert Group at its ninth session, and the review and update of UNFC that is planned to start in 2018. It is not intended to be comprehensive, and many of the issues it contains would benefit from further thought and discussion.

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I. Introduction

1. The document "Draft Guidance on Accommodating Environmental and Social Considerations in the United Nations Framework Classification (UNFC[1])" (ECE/ENERGY/GE.3/2018/3) (2018 report) presents the work of the E-Axis Sub-group and its successor, the Social and Environmental Considerations Task Force. Reports of the predecessor E-Axis Sub-group were presented at the 2016 and 2017 meetings of the Expert Group on Resource Classification; they provide background information and can be found on the United Nations Economic Commission for Europe (ECE) website[2].

2. The Terms of Reference of the E-axis Sub-group required it to provide: "A list and definitions of the E-axis classification factors, as identified in UNFC". This was not intended to include factors other than social and environmental, such as economics, market prices, legal, regulatory or contractual conditions. However, the latter does not exist in isolation, and during the preparation of the document "Draft guidance on accommodating environmental and social considerations in UNFC" presented to the seventh session of the Expert Group in 2016 (ECE/ENERGY/GE.3/2016/8), it became evident that clarification of additional concepts and terminology would be appropriate. Several of these are of general relevance beyond the scope of the Task Force and the E axis. They are presented in this document.

3. The 2017-2018 Work Plan for the Task Force, includes a requirement "to ensure alignment with the Sustainable Development Goals and the commitments of the Paris Agreement on climate action". This could have significant implications for the work of the Task Force and is discussed in Section III.

4. This document summarizes various factors, for consideration during the forthcoming update of UNFC.

II. Terms and Concepts

A. Why do we classify resources?

5. Resource classification is not an end, but a means of providing information to assist in making decisions that may include (United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 (UNFC-2009) page 3, I Application):

(a) Industry business process management, including operational decisions, ranging from major to smaller projects, such as drilling or mining, platform and facilities construction, to day-to-day maintenance of operating projects.

(b) Financing, raising and allocating capital by the provision of information to investors and potential investors in public or private realm to assist in their decisions to provide capital.

(c) Resource management by governments and others, including:

- Short-term administration of activities of national and other resource owners.

[1] The United Nations Framework Classification for Resources (UNFC) changed its name in April 2017. Prior to this, UNFC was known as the United Nations Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 (UNFC-2009).

[2] http://www.unece.org/index.php?id=47092

- Longer term, the compilation of resource inventories, planning for technology development, and future supply.

B. The context of evaluation and classification: the Realm of Discourse (ROD)

6. The Preface to UNFC states, "It provides a single framework on which to build international energy and mineral studies, analyze government resource management policies, plan industrial processes and allocate capital efficiently". However, although there is some degree of commonality, the specific context and conditions under which the different users will evaluate and classify resource are not the same. For example:

(a) Resource reporting for the United States Securities and Exchange Commission (SEC) / Financial Accounting Standards Board (FASB) and the Canadian Standards Association (CSA) have different requirements.

(b) An operating company must satisfy regulatory requirements, but these may not be a consideration for a government agency

(c) A government agency may estimate and classify resources over a large area that contains projects operated by many companies and will be concerned about aggregate performance, not the individual projects.

(d) The conditions required to a meet a Sustainable Development Goal (SDG) may differ from those of operating companies or by governments.

7. For each of these examples (and more), resource evaluation and classification will have to meet a consistent set of conditions, that may differ from the others. Once these are met, evaluation scenarios will address conditions that apply to specific projects. The context and set of conditions can be described as a "Realm of Discourse" (ROD)[3], the full context in which a decision is to be made and will determine basic conditions relevant to evaluation and classification for that purpose.

8. Resource estimates and classification within the same ROD must satisfy the same set of conditions and should be comparable[4]. Since there are differences in conditions between RODs, there may be differences in estimated quantities and classifications from those of other RODs.

9. An understanding of the result of a classification will be limited unless the ROD and the factors that underly it are known. In practical terms, this means that the purpose, conditions, contingencies, and any other factors should be clearly stated when reporting resource classification.

[3] "Realm of Discourse" may be compared to practices in accounting for which Management Accounting, Cost Accounting, and Tax Accounting are separate RODs. It is also a concept from logic and mathematics in which the initial conditions under which an argument is developed are clearly laid out (e.g., all positive integers, all real numbers, complex numbers, etc.).

[4] This does not mean that they will be identical, but that, given amount and quality of the available information, they will not differ significantly.

C. Projects, Realm of Discourse, and Scenarios

10. The Guidance Note to support the UNFC-2009 Definition of a Project was issued in 2016[5]. We assess projects by developing and evaluating scenarios and classify the results. In the context of UNFC, a scenario is a set of current and future events that are considered to describe the features of a project relevant to its potential commerciality and includes not only economics but other factors that control commerciality (access to the market, the probability of regulatory approval, etc.).

11. There are two components to a scenario, those dictated by the ROD (e.g., for financial reporting) and others that are specific to that scenario.

12. It is not unusual for a project to be assessed under more than one scenario for which the ROD conditions are the same, but with different details (e.g., to optimize project results or to examine sensitivities to input parameter assumptions).

13. The ROD dictates the factors to be considered in an evaluation scenario. As a classification system, the UNFC is "value-free", and can be used to classify the result of evaluations whatever the ROD. As a simple example, a project could be evaluated and classified under different Realms of Discourse that are identical except for the treatment of CO_2 emissions:

(a) No consideration is given to the potential climate effects of the project's CO_2 emissions. This could be the actual condition considered by the operator for the project to proceed to completion, resulting in classification as E1.

(b) The project's CO_2 emissions may be under review by a regulatory authority for granting approval for the project to proceed, resulting in classification as E2.

(c) The CO_2 emissions of the project and of the use of the product could be considered for an assessment of the impact on climate change, resulting in classification as E3.

(d) Classification to assess potential carbon credits as part of Nationally Contributions under the Paris Agreement.

14. The results of the evaluations of the four example scenarios can all be classified by UNFC, but they would not necessarily be classified in the same way.

III. The Sustainable Development Goals and the Commitments of the Paris Agreement on Climate Action

15. The Sustainable Development Goals (SDG) and the Paris Agreement on climate action are RODs that can be accommodated by UNFC.

- Some of the SDGs imply or suggest a set of policies or practices that could affect the economic, social, and environmental implications of energy development projects. Those policies or practices would define a ROD for an evaluation; different resource classifications may result in these different SDG-driven RODs.
- UNFC could be used in studies carried out to assess and provide information on specific SDGs that have a direct implication for resource development, such as #7

[5] The definition says, "a defined development or mining operation which provides the basis for economic evaluation and decision-making", but it does not address exploration, renewable, or anthropogenic resources, and could do with further review.

Affordable and clean energy, perhaps such as, #9 Industry, Innovation and Infrastructure, #12, Responsible Consumption and Production, and # 13 Climate Action.

16. Implementation of the Paris Agreement on climate action will be carried out by participating countries through nation-specific Intended Nationally Determined Contributions (INDCs). As these INDCs are developed, they will become part of the basic context or ROD for energy development projects and resources in each country. If desired, regionally or globally consistent policies can be hypothesized as a single ROD for evaluation of resources across multiple countries or regions.

17. Development of the use of UNFC for the SDGs and the Paris Agreement would benefit from the further discussion but is beyond the scope of this exercise.

IV. Classification considerations

A. Degree of favourability

18. UNFC describes the E-axis factors as (UNFC-2009 incorporating Specifications for its Application, Part I, Section II, Categories and Sub-categories):

> "...designating the degree of favourability of social and economic conditions in establishing the commercial viability of the project including consideration of market prices and relevant legal, regulatory, environmental and contractual conditions".

19. The phrase, degree of favourability, is not defined in UNFC but can be interpreted as the probability[6] of attaining commerciality, and applies to all the UNFC axes. The probability of economic, social, and environmental being such that a project can be carried out is a key factor in determining classification and dictates a threshold for when changes in classification are to be made (e.g., progression from E2, "Expected to become economically viable in the foreseeable future", to E1, "Confirmed to be economically viable").

20. It is recommended that the term, "degree of favourability", be replaced in UNFC with a reference to probability.

B. Contingencies

21. UNFC-2009 incorporating Specifications for its Application, Part I, Section III, Classes, states:

> "Potentially recoverable quantities may be recovered in the future through projects that are contingent on one or more conditions yet to be fulfilled. Contingent projects are classified into projects for which the social and economic conditions are expected to be acceptable for implementation and those where they are not. In the former case, contingency is caused by the recovery project not being sufficiently matured to confirm technical and/or commercial feasibility, which can then provide the basis for a commitment to extract and sell the commodity at a commercial scale. In the latter case, neither the project nor the economic and social conditions are sufficiently matured to indicate a reasonable potential for commercial recovery and sale in the foreseeable future."

[6] This is more likely to be a subjective probability than a calculated probability.

22. Contingencies are criteria that must be satisfied before a project can proceed to production and may include "market prices and relevant legal, regulatory, environmental and contractual conditions" (UNFC-2009 Section III Classes), and others. Although the contingencies may differ between projects, many would include social and environmental issues. In some cases, a contingency could fall within the scope of both the E and F-axes and possibly the G-axis.

23. The Petroleum Resources Management System (PRMS) refers to contingencies and the Committee for Mineral Reserves International Reporting Standards (CRIRSCO) Template uses the term "modifying factors" in the same sense. They may include "market prices and relevant legal, regulatory, environmental and contractual conditions" and others.

24. *Definition*: **Contingencies** are criteria or conditions that must be satisfied before a project can proceed.

25. The extract from the Canadian Oil and Gas Evaluation Handbook (COGEH) Volume 2, Section 2 (Resources Other than Reserves (ROTR) Guidelines) that follows is an example of contingencies that may be considered when classifying oil and gas resources. Not all will be relevant in every case, nor is this list necessarily complete and further development would be required to use it with UNFC, but is included to provide context.

(a) Technical contingencies

- Established Technologies (not a contingency, but included for completeness and more or less equivalent to the United States Securities and Exchange Commission (SEC) "Reliable Technologies"). Reserves may be assigned.
- Technology Under Development. Field tests to establish the economic viability of an extraction process. Contingent Resources, but not Reserves, may be assigned.
- Experimental Technology. Field tests to establish the technical viability of a recovery process. No recoverable resources may be assigned (although production would be recorded and, when needed, reconciled at the end of a reporting period).

(b) Economic contingencies

- Fiscal regime (prices, royalty rates, production sharing terms, income taxes in the case of after-tax evaluations, etc.). Note: an example is a contingency for the gas price to increase from US$ 2/Mcf (1,000 cubic feet of natural gas) to US$ 4/Mcf to move from being uneconomic to being economic.
- Costs (capital costs, operating costs, pipeline tariffs or tolls, etc.).

(c) Non-technical contingencies

- Legal: the right to explore for, produce and sell, or receive hydrocarbons in kind, or payment for risk services.
- Regulatory contingencies: regulatory approval to proceed with development and production.
- Market access.
- Political factors: these could include political or social unrest, war, or government action of any kind that may impede proceeding with a project. See separate comment below.

- Social licence: social licence is related to environmental contingencies, but it is not necessarily a function of formal regulatory approval. What constitutes a social licence is not readily determined and depends heavily on subjective personal opinions and political issues specific to each project's geographic location. At this time, guidance on the role of social licence in the classification of oil and gas resources is not well developed.
- Internal and external approvals and commitment to project development.
- Development timing.

C. The foreseeable future

26. UNFC-2009 incorporating Specifications for its Application, Part I, Section III, Classes, uses the term "foreseeable future" and, in one form or another, it is a basic concept for resource evaluation. It may be dealt with by imposing an arbitrary time limit (e.g., the SEC five-year limit for Proved Undeveloped Reserves, or a fifty-year limit to assigning reserves to bitumen recovery projects). However, not only do resource projects differ greatly, but there are many components to a resource evaluation, each with its degree of predictability over time, and it would not be realistic to impose a definite time for all projects classified under UNFC.

27. Consideration should be given as to whether the concept of the foreseeable future needs clarification.

D. Internalities and externalities in resource evaluation

28. Resource classification has traditionally focused on the immediate extraction process as carried out by an operating entity with little or no consideration of externalities, which are described as:

> "An externality is a cost or benefit resulting from an action that is borne or received by parties not directly participating in the action." (the United States Environmental Protection Agency (U.S. EPA), 2010)[7].

29. In the current context:

- An internality is a cost or benefit that affects an equity participant in a project.
- An externality is a cost or benefit that affects a party who did not choose to incur that cost or benefit.

30. These may be adverse (negative) or beneficial (positive), but projects proceed by a process that progressively satisfies what may be regarded as negative internalities or externalities. Although positive internalities and externalities may motivate a project, once resolved they play no further role in classification.

31. Concerns about social and environmental issues often involve externalities that have not been previously considered in resource assessment but are becoming of increasing importance. They may be dealt with by processes such as an Environmental and Social

[7] U.S. EPA, 2014, Guidelines for Preparing Economic Analyses, EPA 240-R-10-001, December 2010 (updated 2014); Front Matter, p. 15. Available on-line at: https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses. Additional information and references can be found at https://en.wikipedia.org/wiki/Externality

Impact Assessment (ESIA)[8], which have been developed to address these types of concern, although not every project will be subject to this type of analysis. For classification according to UNFC, externalities may be included in the concept of contingent factors. Examples are:

(a) Climate change may not be a consideration for the evaluation of resources, but there is an increasing necessity for the CO_2 emissions of a project to be addressed. This may be done in several ways, (depending on the ROD) and could include:

- That there is currently no CO_2 price that blocks the project and the issue is ignored; there is no contingency.
- Applying a shadow price for future CO_2 costs that would block the project; a contingency until resolved.
- Government imposed costs for CO_2 emissions (by various means) that could affect the economic viability of a project; a contingency that must be addressed.

(b) The design of a national legal/fiscal framework about factors such as climate change or social issues that promotes hinders or prevents, the development of a resource.

32. The table below is a simplified illustrative example from the point of view of a project operator or equity participant and society.

	COSTS		*BENEFITS*	
	OPERATOR	SOCIETY	OPERATOR	SOCIETY
INTERNALITY	Capex, Opex	X	Profits from sales	X
EXTERNALITY	X	Social and Environmental	X	Raw material, Revenue from Taxes, Royalties, Jobs

33. Most existing resource classification systems (PRMS, CRIRSCO Template, etc.) make mention of what could be considered externalities, but provide little guidance, and have historically been used to classify projects by only considering internalities. However, what were historically considered to be externalities are becoming of increasing importance, often to the extent that they become internalities for evaluation and classification, with a significant effect on the ability to carry out a project.

34. An example of this is the System of Environmental-Economic Accounting (SEEA)[9] which addresses the issue of "residuals" which are increasingly likely to be generated the longer a project goes on. This may also include changing views on legacy wastes which cause materials not previously regulated as residuals to be classed as such during a project rather than from the beginning. This is an example of how and why a contingency provision should be made in any full cost accounting approach to a whole project life-cycle.

[8] http://www.ifc.org/wps/wcm/connect/296ae980488551f5aa0cfa6a6515bb18/ESIA.pdf?MOD=AJPERES

[9] https://unstats.un.org/unsd/envaccounting/seea.asp

E. Commercial viability

35. Commercial viability is described (UNFC-2009 incorporating Specifications for its Application, Part I, Section III, Classes Footnote c to Figure 2) as:

> "Commercial Projects have been confirmed to be technically, economically and socially feasible…."

36. That is, they have satisfied all requirements of the E, F and G axes, to be feasible to proceed.

37. The terms "**economically viable**" and "**economic (in the narrow sense)**", are used in Footnote d of UNFC-2009 incorporating Specifications for its Application, Part I, Annex I, Definition of Categories and Supporting Explanations as:

> "**economically viable** encompasses economic (in the narrow sense) plus other relevant "market conditions", and includes consideration of prices, costs, legal/fiscal framework, environmental, social and all other non-technical factors that could directly impact the viability of a development project."

38. This definition of "economically viable" (which includes "economic in the narrow sense") is for the E-axis factors, but a project would not be commercially viable unless it also met the requirements for the F and G axes.

39. The term "economic in the narrow sense" is not defined in UNFC-2009, nor is it commonly used elsewhere, but it is considered to mean that a project satisfies a monetary criterion, such as having a positive Net Present Value (NPV) at a specified discount factor.

40. To avoid confusion, between the terms "commercial", "economic" and "economic in the narrow sense" it is recommended that UNFC:

(a) Discontinues the use of the phrase "Economic in the narrow sense";

(b) Defines the term Economic to only refer to the monetary aspects (e.g., a cumulative discounted cashflow (NPV) greater than zero), instead of Economic in the narrow sense. This is the common usage of the word "economic" for project assessment and consistent with the definition of the word in the Oxford English Dictionary as "maintained for profit";

(c) Replaces "Economically viable" in the E-axis definitions with "economically, socially, and environmentally viable";

(d) Uses "economic" only in reference to the E-axis, not as a synonym for the term Commercial which refers to all three axes of UNFC. ("Commercial Projects have been confirmed to be technically, economically and socially feasible", in the footnote to UNFC-2009 Figure 2).

41. *Definitions:*

(a) **Economic:** a project is economic when the anticipated monetary revenues equal or exceed the costs by a margin that satisfies financing requirements, taking risks and opportunities into account, and provides a positive return on investment, often measured by a monetary criterion, such as having a positive net present value (NPV) at a discount factor.

(b) **Commercial:** a project is commercial when it satisfies all the relevant criteria of the E, F, and G axes that are required for it to proceed.

F. Environmental, social, and political contingencies

42. Neither social or environmental factors are defined in UNFC, nor in any of the resource-specific guidelines. The difference between them is not always clear, and while formal definition may not be necessary, there should be a good understanding of these terms mean. A practical application of them would be:

(a) **Environmental**: the physical, chemical, and biological impact on, or changes to the project area and surroundings, due to a project (e.g. heavy metal contamination in soils or water, disruption of wildlife habits and migration characters, etc.).

(b) **Social:** the resulting impact on humans and society, from a project, such as:

- Effects stemming from environmental changes (e.g. health issues due to heavy metal contamination).
- Changes in social systems and structures, (e.g. ownership claims, traditional land usage, land and other value changes, changes in local population community structures, etc.).

43. These impacts are commonly thought of as being negative but can be positive. Examples of positive environmental impacts include the reprocessing of mine wastes to recover metals, and carbon dioxide capture. Similarly, for social impacts, such as the use of a flooded abandoned quarry for use as a reservoir or recreation, job creation, and advances in technology.

44. Assessment of these impacts requires an integrated use of the physical and biological sciences, engineering, economic, and the social sciences.

(c) **Political:** UNFC does not identify political factors as a contingency although they can have a significant influence on the ability to proceed with a project. Both the CRIRSCO Template and PRMS include political factors as classification criteria but without definition or clarification. It may not be clear where the boundary between social and political issues would lie.

45. From the point of view of classification, political factors can be action by a controlling organization that may influence, impede, prevent or facilitate the ability to proceed with a project. The controlling organization can be varied, from a formal government to guerrilla activity, and action may include legislation, regulation, expropriation, armed conflict, etc.

46. Political factors may sometimes be considered as force majeure situations. An example of this was the reclassification of reserves (111, 112, 113) to contingent resources (221, 321) as the result of armed conflict in Libya in 2011.

47. The resolution of political factors would be beyond the influence of most users of the UNFC other than governments. However, in some cases, they may be influenced by activities such as lobbying or resolved through discussion and negotiation. There is an argument for considering such factors as belonging at least in part, to the F axis, although they are not currently mentioned as such.

G. Social licence to operate (SLO)

48. A project cannot proceed unless the relevant social and environmental contingencies are resolved, typically described as obtaining a "social licence to operate" (SLO).

49. Social licence is a generic term that collects all the social and environmental issues relevant to a resource project under one heading, and although a useful informal term, it is not always clear what might be included. Because of its generic nature, "social licence" is not recommended as a classification criterion, which should be based on the individual contingencies that apply to a project.

50. There are several "definitions" of "social licence to operate", but in summary and with respect to UNFC, achieving a social licence to operate is the resolution of any social and environmental issues that could inhibit or prevent proceeding with a project. This does not mean that all issues will have been resolved to the satisfaction of all parties, but that, for a specific project, they have been resolved to the extent that the project can proceed, even if there are still objections. Considerations should be given to whether a social licence to operate is likely to be maintained over the forecast life of a project.

51. Social licence to operate can be considered as having two components:

(a) **Formal**. The legal and regulatory processes such as the granting of environmental approval, approval to drill, explore, develop, construct, etc.

(b) **Informal.** Those outside a formal legal or regulatory process such as:

- Externalities, unwanted costs that may be imposed on local communities by a mineral recovery project.
- Objections by organizations or individuals that would not be directly affected, but who have concerns of a more general nature (e.g., object to the recovery of uranium in principle).

52. This may trigger further activity within a formal legal or regulatory setting, or informal civil activity ranging from protests to violent action. In the extreme, civil unrest and war may also fall under this heading.

53. These factors could also be further divided into those issues that can or cannot be affected by an organization (operating entity, equity participant or government).

V. Other issues

A. Abandonment, decommissioning, and reclamation

54. The terms "abandonment, "decommissioning" and "reclamation" are not used in UNFC, but they are very much part of social and environmental considerations, and thought is needed as to how they could affect classification under UNFC.

55. There are three possible stages in this process[10]:

(a) Abandonment: involves downhole work to seal off flow in well bores, and surface work to ensure safety at well sites, mines, and quarries or other project sites;

(b) Decommissioning: the closing and potentially removing surface facilities associated with a project. These could include anything from minor local facilities, to major facilities such as large processing plants, or offshore structures;

[10] The abbreviations A&R (Abandonment and Reclamation) and AD&R (Abandonment, Decommissioning and Reclamation) generally include all three of these activities, as does, in a different context, the accounting term ARO (Asset Retirement Obligations).

(c) Reclamation (sometimes called Remediation): the restoration of the surface to conditions that are required by regulatory or other provisions. This can involve minor activities for major restoration projects.

56. A possible additional stage is:

(d) Regeneration, during which the land is returned to or reconstituted for productive use (not necessarily measured by its economic value), for example, a rock quarry used as a reservoir or lake for recreation.

57. The evaluation and classification, of new projects, typically include forecast Abandonment, Decommissioning and Reclamation (AD&R) costs, but they are often not included for the evaluation of ongoing operations.

58. Provision for AD&R costs may be made in several ways, including government-mandated payment into escrowed funds. However, it is not uncommon for a project to reach the end of its life without the means to carry out AD&R. In the oil and gas industry, this has led to thousands, of "orphan" wells around the world, often leaving significant environmental problems. Similar issues occur for mining when abandoned mine sites are left without remediation. When this occurs, AD&R becomes the responsibility of society by default.

59. How should issues of abandonment, decommissioning, and remediation be handled for classification according to UNFC? In some cases, excluding AD&R as a consideration could result in a resource being classified as E1, when including it may could make a project a type of E3.3. Should inclusion of AD&R be mandatory for UNFC when it is significant for a project?

B. Subsidies

60. The UNFC Sub-class E1.2 states:

> "Extraction and sale is not economic since current market conditions and realistic assumptions of future market conditions, but is made viable through government subsidies and/or other considerations."

61. UNFC does not contain a definition of a subsidy, and neither does the CRIRSCO Template nor PRMS. A joint report of the International Energy Agency (IEA), Organization of the Petroleum Exporting Countries (OPEC), Organisation for Economic Co-operation and Development (OECD), and the World Bank defines an energy subsidy as "any government action that lowers the cost of energy production, raises the revenues of energy producers, or lowers the price paid by energy consumers[11]".

62. E1.2 applies only when, the receipt of "government subsidies and/or other considerations", that establish project viability, have been confirmed. If this is not the case, then classification would be as E2.1 or E2.2.

63. Direct funding or other forms of assistance (i.e. grants, low-interest loans, guarantees of product prices) by a government of a project that would otherwise be uneconomic, that results in it being economic for the owners may be for social or other reasons, and could be regarded as an equity contribution, but for UNFC, the quantities associated with such a project should be classified as E1.2.

[11] https://www.iea.org/media/weowebsite/energysubsidies/second_joint_report.pdf

64. A project normally has a fiscal regime imposed by a government (royalties, taxes, etc.) that enables society to share in its results. Adjustments to the terms of such a regime may be modified so that it remains viable for an operator while still providing this. Such adjustments are sometimes claimed to be a subsidy but are part of a normal fiscal structure, and it is questionable if it should be regarded as a subsidy for classification under UNFC.

65. Subsidies can take many forms - in the context of UNFC, the issue is whether the form of a subsidy would change the UNFC Category or Sub-Category for a project.

C. Safety and security

66. During the review of this document, there was a question as to whether safety and security should also be considered. This has not been addressed but is noted for future consideration.

D. Aggregation

67. The results of the evaluations of several projects are typically summed to provide a total for a report, a process described as "aggregation". Such an aggregate may contain the results of hundreds of individual evaluations.

68. Figure 1 UNFC-2009 Categories and Examples of Classes, of UNFC-2009 (ECE Energy Series No. 42) shows 50 different possible Sub-Classes for a resource project, although only 16 of them are indicated as being likely to be used (i.e. the highly coloured boxes). Decision-making is likely to be made on aggregated values from several Sub-Classes. How should this be done? The process is fraught with complexities (e.g., assessing probabilities of discovery and/or development, dependencies, etc.) and has not been addressed for UNFC.

E. Reporting

69. The traditional engineering, geological and economic aspects of resource evaluation are probably generally familiar to or accepted by most users. This is not the case for social and environmental considerations which cannot be understood in isolation and require some explanation. It is important therefore that when the results of social and environmental factors significant to the classification of a resource, an explanation should be provided.

F. Comments received during review

70. Comments received during the final review of this document, and the earlier version presented to the Expert Group at its eight session in 2017 (ECE/ENERGY/GE.3/2017/6), that were wholly or partly beyond the scope of the Task Force's mandate are noted below for possible consideration during the planned update of UNFC.

(a) Certain terms: criteria, factors, issues and conditions have been used interchangeably. The word contingency was also noted, but it has a specific meaning, as something (condition) that must be resolved for classification, and has not knowingly been used interchangeably;

(b) No attempt has been made to provide greater consistency in use of these terms in the 2018 Report or this document, and it applies to all UNFC, not only to social and environmental matters;

(c) The wording in the document "Draft Guidance on accommodating environmental and social considerations in UNFC" (ECE/ENERGY/GE.3/2018/3) has been changed from previous drafts, to indicate that an E1.2 project is economically viable, because of subsidies or "other considerations", but it was noted that the "other considerations" are not defined;

(d) The current E3 definition includes all "quantities that are forecast to be extracted but which will not be available for sale". The question was raised as to whether these quantities should all be included in E3, or should they be classified under "non-sales" associated with the specific category to which they apply, e.g., in E1 non-sales if the project is in E1, E2 if E2 non-sales, E3 if non-sales E3?" Currently, these non-sales quantities lie in a single "box" outside the "regular" three-axis UNFC, as show in Figure 1 of UNFC;

(e) The E axis includes social, environmental, and economic factors. The 2018 Report recommends definitions for the first two of these and assumes that "economic" refers to an assessment such as a discounted net present value. However, it was suggested that it is not clear where factors such as ownership, licence, legal and regulatory issues are for the E axis. They may, in fact, lie on the F axis. Clarification of this would be useful;

(f) It was suggested that the E2 Category should be described by qualitative terms (e.g.," high confidence") rather than probabilities. This issue is too complex to be described briefly and has been the subject of significant studies in areas other than oil and gas classification. It could, however, be worth further discussion.

VI. Recommendations

71. The terminology and concepts discussed in this document have been adopted in the preparation of the document "Draft Guidance on accommodating environmental and social considerations in UNFC" (ECE/ENERGY/GE.3/2018/3) that is to be presented at the ninth session of the Expert Group on Resource Classification. This was considered necessary for the E-axis Sub-group exercise, although it goes beyond its immediate concerns. It is of limited scope and does not cover all relevant issues.

72. An examination of how these terms and concepts are used elsewhere is recommended, such as in the System of Environmental-Economic Accounting 2012 (SEEA 2012, also recognized by the United Nations), and the Global Reporting Initiative (GRI).

73. The issues raised herein are presented for consideration by the Expert Group on Resource Classification, notably for the planned update of UNFC scheduled for 2018 or later. Many of them warrant further thought.